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GONE TO GRASSE

THE home-bound European traveler, gloating over bargains in price and weight as he stuffs the corners of his luggage with perfumes, rarely suspects the difficulties they present as gifts. Does he know, for instance, that the scent, spicy and flattering to rich complexions, thus appropriate for a lady with an oily skin, will lose its flavor on a lady whose skin is dry and less pigmented? Has the simple tourist been warned that "a gentle, retiring woman must not use the same perfume as her headstrong excitable friend;" or that "the sportswoman will not perfume herself in the same way as the intellectual?" What American, male or female, appreciates that the active women of our world must change their perfumes many times a day, knowing that "a same perfume will not suffice . . . for a skin becoming golden in the sun, a skin emerging from the sea, (a skin) vibrant in the brilliance of a ballroom or softly relaxed in the shadow of a blossoming linden tree?" Bargain indeed! Rather than risk a wrong choice of scent the wise traveler will choose the alternate disaster of bulkier gifts and overweight.

Alas for Grasse; the books which made me so wise were purchased there, at Les Parfumeries Fragonard, and should have induced me to buy and buy and buy . . . perfumes. Instead, I bought only the books. One, *L'Amateur de Parfums*, by Victor Bayle, is the source of the above quotations; the other, *Langage Astrologique des Fleurs*, by M. L. Sondaz, is now the only perfumed volume in my library. It is imbued with a scent called "Belle de Nuit," appropriate, I suppose, to people who buy such books.

Mr. Sondaz' style is certainly appropriate to perfumery. I choose the following paragraph to quote because an interest in the tuberose induced my lateral approach to the perfume industry. "Certain very Venus-like women," Mr. Sondaz pontificates, "will choose the tuberose, whose pure white, so delicately touched with pink, and (whose) suave and voluptuous perfume evoke the sorcery of Selene. . . . The Greeks called it the flower of cities because it represented in the ancient world a refinement of cultivation. It ornamented the terraces of Ninevah, of Babylon, and of Persepolis. Its odor ravished the senses of Crœsus, of Semiramis, of Darius, of Alexander. . . . Lydian dancers in skillful or frenzied choreographies, priestesses of Astarte blended their seductions with the odor of tuberoses, whose

fragile blossoms formed a sweet and enervating shower."

When this book emerged from my luggage enveloped in "Belle de Nuit" I naturally deserted my microscope. But alas for Mr. Sondaz! His enthusiasms carried him too far in both space and time. The tuberose (*Polianthes tuberosa*), whose ancestry is not known, is generally thought by botanists to have originated in the highlands of Central or South America, and it was not introduced into Europe until the late 16th century. For more accurate, unscented, information I turned to Mr. Bayle.

Knowledge of the first use of perfumes, he writes, "is lost in the night of time." From the Latin *per fumum*, the word refers to fragrant fumes derived by combustion from resins and aromatic woods and barks. The technique was known long before the Roman period, however; Bayle suggests that the fumes were used by primitive peoples to counteract the less attractive odors caused by the combusion of sacrificial victims.

From this original utilitarianism the ups and downs of the perfume industry are traced by Mr Boyle to the significant date 1286, when "the corporation of master-glovers was recognized in Paris . . . (This is) a famous date in the history of French perfumery because it was between their hands (the glovers'!) that during several centuries the manufacture of perfumes would be concentrated" . . . despite constant wrangling with the haberdashers, who naturally wanted to get in on a good thing.

During the 16th century, at the instigation of the Medicis, the first perfume factory was established at Grasse, France, to manufacture perfumed gloves in the fashion of Spain and Italy. By the 19th century perfume-making had become such a big thing at Grasse that perfumers supplanted the weavers and tanners who had previously profited most from the natural advantages of the area.

For years it had been known that in the hills surrounding Grasse "the perfume of roses had a strength and a quality not to be found elsewhere." Now, "in less than a hundred years, the jasmines, tuberoses, roses and oranges of the country around Grasse have made of this little town a capital, that of the industry of materials fundamental to or destined for perfumes."

But alas, now, for the tuberose. "Flower with perfume charged," wails Mr. Boyle, "with nonchalance, the tuberose is dying, the tuberose is dead." Perhaps its scent is too sweet and enervating; perhaps today's ladies are less Venus-like. At any rate, the erstwhile annual harvest of 60,000 kilograms of blossoms in the area of Grasse has shrunk in recent years to 20–25,000 kilos. (A kilo is 2.2046 lbs.; a single tuberose blossom is 1½–2½ inches long, shaped like a trumpet, and a little over an inch across at the wide end. The tuberose may be dying, but can we say it's dead?)

Each plant produces from 20–32 blossoms, opening usually a pair at a time, from the base of the inflorescence toward its indeterminate apex. In the south of France tuberoses begin to bloom about the end of July; from then until the end of September very

early each morning the open blossoms are removed with sharp scissors and rushed to the perfume factories. By October 1st the scent begins to weaken, flowers are no longer gathered and, still according to Mr. Bayle, the tuberose becomes a drug on the markets around Grasse.

At the Fragonard factory and from Mr. Bayle I learned that the scent is extracted from the delicate tuberose, as well as from jasmine, by a very old process called *enfleurage*. (By this method a ton of flowers averagely yields 10–16 ounces of essential oil; therefore I was not surprised to learn recently from another source that *enfleurage* is no longer used by the larger producers). It consists of placing the blossoms on trays of purified pork and beef fat; the flowers are changed each 24 hours and the fat, after several months, is washed in alcohol at a temperature of 96 degrees C. The pure extracted essence obtained in this way is aged in a refrigerator for 10 months; in the case of the tuberose the fixative used with the oil is a small amount of ambergris and castoreum.

Enfin: we have the essential oil, but this is not yet what presents a problem to the tourist. The final product, perfume, blended often from combinations of animal, plant and synthetic scents, is a work of art indeed. There's one for every mood in any season at whatever hour of a busy day. Mr. Bayle lists 160 of them by name, and hints at dozens more. It's up to you to learn which best accords with a certain lady of a special temperment and a specific pigmentation—before you go to Grasse. —E.R.E.

THE DAWN REDWOOD

An Unusual Tree for St. Louis

The Dawn Redwood, *Metasequoia glyptostroboides*, has presented a variety of surprises for gardeners and botanists in the United States. It grows remarkably fast and it has proved to be hardy in selected spots as far north as Chicago and New England. This fall, the nine-year-old specimens behind the Shaw House (already over ten feet tall) turned a copper-brown, distinctly more coppery than the fall color of the Bald Cypress.

A tree of ancient lineage, the Dawn Redwood was first discovered in a remote region of China by Mr. T. Wang in 1945. It was previously known only from paleobotanic records but is now known to exist as a single living species in a very limited area and it or its geologic history dates back to Mesozoic times. These "living fossils" are large trees attaining the height of at least 115 feet with a trunk diameter of at least seven and a half feet in their native habitat.

The specimens of Dawn Redwood at the Garden were grown from seed obtained through the Arnold Arboretum from China. The trees present much the same general appearance as the Bald Cypress and, as in the Bald Cypress, the branchlets are deciduous. Local nurseries, realizing the promise of this interesting tree are now offering stock plants for sale. —E.L.E.

AN OFTEN OVERLOOKED GROUP OF HOUSEPLANTS

By HENRY KALTENTHALER

USUALLY when one thinks of houseplants one visualizes such plants as African Violets which require watering every day or two. Of course, there are the succulent plants which require less care, but even with these one must water them fairly frequently if he wishes to secure good growth or flowers. There is one habitat group of plants, though, which requires essentially no care and at the same time gives excellent results as unusual plants. These are the aquatic and semi-aquatic plants. For the purposes of this article we shall limit the use of the term aquatic to those plants which thrive only in a submerged environment or else in a floating situation. The semi-aquatics then shall constitute all of those plants which will tolerate a submerged condition but which do best when planted in not over an inch or so of water. Some will even grow to profusion if planted in pots which are set in water to within an inch of the top.

Perhaps the best known of all of the aquatics is none other than the Water Hyacinth (*Eichornia crassipes*) which becomes a noxious weed in a slightly more southerly location than St. Louis. However, this is actually one of the most difficult of all of the aquatics to keep in a healthy condition since it demands an exceedingly well-lighted location in order to maintain itself in the winter months. The submerged aquatics actually offer the greatest potentialities when it comes to the decoration of a room. Most will grow in any container with glass sides in a sunny location or in the center of the house if given sufficient artificial illumination. This container in which the plants are grown may vary from the dime store aquarium through battery jars, glass bricks and even to rectangular aquaria containing practically any volume of water from two to fifty gallons. The rectangular aquaria will usually cost in the neighborhood of one dollar per gallon volume and can be bought in most any pet store. These pet shops also usually carry a rather wide variety of aquatics and semi-aquatics which will do well in the home situation. The following is a partial list of plants which are rooted aquatics and which usually stay within bounds in the home environment.

Water Sprite (*Ceraptopteris thallictoides*)
Corkscrew val (*Vallisneria spiralis*)
Some Water Four-leaf Clovers (*Marsilea* spp.)
Madagascar Lace Plant (*Aponogeton fenestralis*)
Madagasgar Sword Plant (*Aponogeton undulatus*)
Various Arrowheads (*Sagittaria* spp.)
Various Burheads (*Echinodorus* spp.)
Hygrophila
Spike rush (*Eleocharis acicularis*)
Various species of Cryptocoryne

In addition to the aquatics which are rooted there are many which are either non-rooted (i.e. they are not anchored in the bottom of the tank) or else which form such long stems that, to all intents, they may be considered as non-rooted. In the former

group are the Duck Weeds (Lemna and Spirodela) and two very small floating ferns (Salvinia and Azolla) which form a dense mat on the surface of the water under favorable conditions. Other floating aquatics are Water Hyacinth, Water Lettuce (Pistia), and a floating form of Water Sprite, all of which form floating rosettes of leaves instead of mats. A third group of non-anchored aquatics are the truly non-rooted ones such as Lesser Bladderworts (*Utricularia minor*) and Hornwort (Ceratophyllum). Quite similar in habit to these last plants are the long-stemmed rooted plants of which the well-known Ditchwort (Elodea) and Fanwort (Cabomba) are typical examples.

By utilizing various of these plants in appropriately proportioned aquaria one can have beautifully landscaped (or, more correctly, aquascaped) scenes in the living room. If, after one has set up his aquarium and enjoyed it for several days, he may want to add to it by purchasing a few fish. Most of the fish available in pet shops will not harm the plants in any way and all of them aid the plants by supplying a small amount of fertilizer. Any pet shop proprietor will be happy to recommend fish which will be suitable for a given environment.

In many respects the most satisfactory of all of the plants for the home are the semi-aquatics which, because of their growth habit, can be grown in an opaque container. While few of these bloom in a showy manner, if at all, most have very attractive foliage. They require little in the way of care other than plenty of water in the region of the roots and plenty of light on the stems. Best of all, one frequently has suitable containers for them around the house so it is unnecessary to procure a special container. Water Milfoil (Myriophyllum), Papyrus (Cyperus), and some Water Four-leaf Clovers are typical examples of this group of plants.

WINTER BLOOMING SHRUBS AT THE GARDEN

By E. L. EVINGER

THE witch-hazels, Autumn and Winter blooming ornamental shrubs of good garden character and habit can be seen growing and flowering at this time in the Garden. The flowers with four long narrow ribbon-like greenish-yellow petals almost cover the branches, now bare of leaves, reminding one of Forsythia. The "witch", probably allied to weak, refers to the drooping or straggling growth habit and the "hazel" to the general similarity to the true Hazels of the genus Corylus. The use of a distillate of the bark or the leaves of witch-hazel as a soothing counter-irritant for skin disorders dates back to Indian legend. Some hand lotions today contain "witch-hazel". The generic name Hamamelis refers to the habit of ripening the fruit of the previous season simultaneously with the flowers of the current season (Greek, *hama*, together, and *melon*, apple or fruit).

There are two native witch-hazels, *Hamamelis vernalis* and *Hamamelis virginiana*. Both may be seen in flower in the Garden now, though *H. vernalis*

usually blooms later in winter or in very early spring when in its native habitat. Two other species have been introduced from the Orient, *H. japonica* from Japan and *H. mollis* from central China. These likewise are very early-blooming, hardy shrubs. They have a touch of red or plurple, which is in the calyx, added to the usually yellow flowers.

The witch-hazels with their hardy excellent-growing form and autumn-winter flowering habit are a most promising genus of shrubs. Further development horticulturally can doubtless bring about more showy flowers for a time when the gardens are otherwise inactive.

Left:
Flowers of *Hamamelis virginiana.*
(Photo by Kenneth Peck)

EVENTS AT THE GARDEN

THE 1957 CHRYSANTHEMUM SHOW.

The Garden's annual Chrysanthemum Display opened November 7 in the Floral Display House and will continue throughout the month. This year the exhibition is designed by the firm of Kimio Obata and Associates and installed under the direction of Mr. Paul Kohl, the Garden's floriculturist.

The design retains the color and mass of the traditional fall shows but adds the new features of emphasizing individual plants and flowers. A traditional Japanese garden with waterlily pool, stone lantern and grotesque pine tree has been built at one end of the Display. At the opposite end of the large greenhouse is a mass of most of the many kinds of chrysanthemums grown at the Garden. Hanging overhead are the baskets of mums for which the Garden is famous.

On the balcony is a large collection of new and old varieties of chrysanthemums grown by the Chrysanthemum Society of St. Louis. Their flowers are arranged in a formal pattern defined by stones and iron benches.

The greenhouses at the Garden are open daily from 9 A. M. to 5 P. M. and there is no admission charge.

FOURTH SYSTEMATICS SYMPOSIUM.

Biologists from all over the United

States met at the Missouri Botanical Garden on Friday and Saturday, October 25 and 26, for the Fourth Annual Symposium on Systematics. Registration and a reception for the attendants was held Friday evening. On Saturday a number of papers given by invited speakers provided material for discussions by the entire group of more than 200 botanists and zoologists from various colleges, universities, and other research institutions.

The subject of this year's symposium was "Basic Concepts and Techniques in Systematics". Basically, systematics is the study of the classification of plants and animals. Originally largely concerned with distinguishing the different kinds of organisms and providing them with names (in which sense it is more or less synonymous with the term taxonomy), systematics has come to consider as well the relationships between various plants or animals and to set up a system exhibiting these relationships. Although systematics is not primarily concerned with evolution or genetics or ecology, these fields contribute evidence to the systematist. This annual symposium provides an opportunity for biologists to discuss problems in systematics, both botanical and zoological. This year the speakers discussed some of the fundamental ideas and methods used in developing systematics.

The meetings were under the joint chairmanship of Dr. Carl Epling and Dr. Ernst Mayr. Dr. Epling, professor of Botany at the University of California, received his degree in 1924 at the Henry Shaw School of Botany. Dr. Mayr, is Agassiz Professor of Zoology at Harvard University.

Dr. A. C. Smith of the National Science Foundation closed the meetings Saturday night with a talk on plant collecting in the Fiji Islands.

The symposium is supported by a grant from the National Science Foundation. Originally designed for scientists of the middlewest, the meetings have been so successful that they are attracting people from all over the United States. —G.V.S.

Holiday Historique.

The third annual fund-raising project of the Women's Committee was given November 1–3. Called "Holiday Historique" and subtitled "The Mayflower Comes to Shaw's Garden", this project featured ideas and decorations based on historical themes. A large-scale replica of the Mayflower, table decorations by various Garden Clubs, an Avenue of Ideas, entertainment, displays of ship models by Scout Groups, a bakery shop, and tables of refreshments were set up in the Display House and two adjacent greenhouses.

Chairman of the project was Mrs. Edwin R. Culver, Jr. Mrs. William J. Hedley and Mrs. T. Randolph Potter were co-chairmen. Admission for adults was one dollar, for children, fifty cents. Funds from previous projects have been used to make urgently needed repairs to the Shaw House, the Museum and Henry Shaw's town house, now used for offices and research laboratories. These repairs add greatly to the life expectancy of these useful and historic old buildings.—H.C.C.

SUGGESTIONS FOR LATE FALL GARDENING

FINISH fall plantings of trees and shrubs. Be sure a small dike of soil is left around planting hole. This is particularly necessary with evergreens for they may need watering (when soil is thawed) during prolonged dry spells in winter.

Late in November is a good time to go over rose bushes and cut back extra-long and vigorous canes. Long shoots on Hybrid Tea roses and other types, except rugosa and climbers, can be cut back to about two feet. Shortening branches decreases danger of strong winds working plants loose in soil when it is thawed.

Get burlap sacking or rush matting ready to cover cuttings and perennials over-wintering in coldframe, should temperature drop suddenly.

Late in November roses should be "hilled" with soil or other mulching material. Straw or coarse grass or juniper branches should be worked in among the rose tops to screen branches from winter sun. Never use materials that will mat or become soggy when wet. Roses will survive best if given plenty of air in the crown, yet protection from winter sun and sudden freezing and thawing.

Late November is a good time to rake oak leaves around Azaleas to provide some protection against winter sun and sudden temperature changes.

Before all the leaves have fallen from trees and shrubs make a mental note of branches that are dead and need to be removed—a job just as well left for a warm December or January day.

As soon as leaf-mulching chores are over for the rotary mower, clean it thoroughly. Remove blade for sharpening some winter night. Drain gas from tank and carburetor, remove and clean spark plug, squirt thin oil into cylinder through spark plug hole and crank several times, then replace spark plug. Clean air filter. Cover mower with plastic or other dust and moisture proof material.

Get in soil for repotting a few houseplants.

Load up bird feeders. —L.G.B.

BOOK REVIEW

Gardening, A New World for Children. By Sally Wright. 183 pp. The Macmillan Co., New York, 1957. Price $2.75.

THIS book is filled with ideas on how to keep children interested in plants and gardening; but almost anyone will enjoy reading it and will find many useful suggestions for hobbies. Here are ideas for extending garden activities throughout the year —from growing plants to preparing skeletons of leaves and collections of dried plants for study. The author is practical. Each suggestion is exciting enough to keep interest alive and the materials and methods are simple. At the end there is a suggested reading list, and a list, with addresses, of suppliers of seeds and plants mentioned in the text.

This book provides enough things to do to keep children, nature students, and gardeners profitably occupied for a long time. —H.C.C.

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SOME FACTS ABOUT SHAW'S GARDEN

The Missouri Botanical Garden (the official name chosen by Mr. Shaw) carries on the garden established by Henry Shaw over a century ago at TOWER GROVE, his country home. It is a private institution and has no support from city or state. The old stone walls and cast-iron fences, the Linnaean House, the Museum, the Mausoleum, and the TOWER GROVE mansion all date from Mr. Shaw's time. Since his death, as directed in his will, the Garden has been in the hands of a Board of Trustees who appoint the Director.

The Garden is open every day in the year (except New Year's and Christmas) from nine A. M. until seven P. M. spring to fall and until six in the winter time though the greenhouses close at five. TOWER GROVE, itself, Mr. Shaw's old country home, is open from one until four, admission twenty-five cents, with special guides. The Garden is nearly a mile long and has several entrances. The Main Entrance, the one most used by the general public, is at Tower Grove and Flora Place on the Sarah bus line (No. 42). The Park Southhampton buses (No. 80), direct from downtown, pass within three blocks of this entrance and stop directly across the street from the Administration Building at 2315 Tower Grove Avenue. The latter is the best entrance for students, visiting scientists, etc. It is open to such visitors after 8:30 A. M., but is closed on Saturdays, Sundays, and holidays. The step-in gate (more or less concealed by the big Cleveland Ave. gate, 2221 Tower Grove) is nearly always open, and there is a service entrance on Alfred Avenue, one block south of Shaw Avenue.

Since Mr. Shaw's time an Arboretum has been developed at Gray Summit, Mo., adjacent to State Highways 50 and 66. It is open every day in the year and has auto roads as well as foot trails through the wild-flower reservation. There is a pinetum and an extensive display of daffodils and other narcissi which are at their best in April.